# USER MANUAL

## INTELLIGENT DISPLAY SERIES (IDS) PANELS

Rugged Displays with Real Time Enhanced Video

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## FCC Information

**WARNING**

TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE. ALSO, DO NOT USE THIS UNIT'S POLARIZED AC PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLETS UNLESS ALL THREE PRONGS CAN BE FULLY INSERTED

1. Use the power and video cables supplied with the product to help prevent interference with radio and television reception. The use of cables and adapters may cause interference with electronic equipment in the vicinity of this unit.

2. This equipment has been designed to meet severe conditions in military environments as specified in MIL-STD-810G, MIL-STD-461F and DO-160F.

3. This equipment is designed to meet the limits for Class A digital devices imposed by Part 15 of FCC rules. These limits are designed to provide reasonable protection against harmful interference when equipment is operating in commercial environments. This equipment generates, uses and can radiate radio frequency energy, and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

4. Operation of this equipment in a residential area is likely to cause interference in which case the user will be required to correct the interference at his own expense. Changes or modifications not expressly approved by Z Microsystems could void user's authority to operate the equipment.

**CAUTION**

**RISK OF ELECTRIC SHOCK - DO NOT OPEN**

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER (OR BACK OF UNIT). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.

This symbol warns the user that insulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any part inside this unit.

This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore it should be read carefully in order to avoid any problems.

IDS DISPLAYS

# Table of Contents

Section Page

# 1.0 PRODUCT OVERVIEW

## 1.1 About This Manual

This product manual will help you through the installation and setup processes of your Intelligent Display Series (IDS) LCD panel. We recommend you read this manual carefully and follow the instructions in the installation chapter for verification of system functions and control settings.

This manual is also available on the Z Microsystems website at ***www.zmicro.com***. For further assistance please visit the Frequently Asked Questions section in the manual, or refer to the section dedicated to Customer Support.

For added convenience and safety, you will find embedded visual cues for quick tips, warnings, new sections,and safety precautions. These are intended for quick supplemental reference and added ease in the installation and operation of the IDS display.

### Notification Icons:


Warnings and Caution Alerts


Notes and Preparation Information


New Section


Necessary Tools


Necessary Hardware


Necessary Software

**SAFETY PRECAUTIONS**

**DANGER:**

To avoid shock hazard:

- Do not remove the covers around the IDS
- Do not connect or disconnect the IDS during an electrical storm.
- The power cord plug must be connected to a properly wired and grounded power outlet.
- Any equipment to which the IDS will be attached must also be connected to properly wired and grounded power outlets.

Additional Assistance for IDS and GCS series ruggedized displays can be found on the Z Microsystem's website along with highly customizable integration options for a wide range of technical platforms and applications.

## 1.2 Product Description

Z Microsystems Intelligent Display Series (IDS) flat panel displays are engineered with unique flexible mounting options, an ultra-high performance modular video processor, and touch panel options built into a rugged lightweight protective housing. The thin, lightweight IDS panels are available in 24", 21.3", and 17" sizes. Each display can be VESA arm-mounted, panel-mounted, rack-mounted, or attached to a specifically designed multi-display mounting frame, such as the Ground Control Station (GCS series).

The IDS Displays offer state of the art Real Time Enhanced Video (RTEV) capabilities to improve tactical surveillance missions. These real-time image improving functions are made possible by Z microsystems third generation video processing engine, applying image enhancements and edge detection algorithms to incoming video streams without adding latency. The result is an unparalleled visual experience delivering mission critical surveillance imaging in real time without quality degradation caused by poor visibility or atmospheric interference.

The IDS displays also offer an interactive touch screen functionality. Intuitive accessibility to live imagery and intelligence translates to increased user effectiveness and information distribution. Together with built-in real-time video enhancement and flexible mounting - all in rugged, lightweight packaging - make the IDS panels a well-suited solution for a variety of fielded military applications.

Highlights

- 17", 21", & 24" active display area
- Native Pixel Resolutions up to
  - 1920 x 1200@60 pixels for 24"
  - 1600 x 1200@60 pixels for 21"
  - 1280 x 1024@60 pixels for 17"
- Supported scaled resolutions up to 1920x1200@60 for 17", 21", and 24"
- Digital and analog video support
- RS232 Communications via USB Type B connector
- Real-time enhanced video imaging
- Soft Menu user-friendly on-screen GUIs
- Tough protective AR shield
- Standard optically bonded AR shield
- Optional optically bonded touch panel
- Rugged lightweight packaging
- Custom mounting options (VESA standard)
- Optional quick-release mounting
- Viewing angles are fully adjustable per 5th - 95th percentile MIL-STD ergonomics specifications
- Applications include shipboard, airborne, ground vehicles, & ground control stations

# 2.0 INSTALLATION

*NOTE: For the fastest and easiest installation of the IDS, follow these steps in the sequence they are presented.*

*WARNING: Using assembly hardware that does not match specifications may damage internal components.*

**This section will provide information and assistance with the following topics:**

- Mounting & Hardware
- GCS Schematics for 17", 21", 24"
- Installation Procedure

### Preparations

In preparation to install the IDS, turn off the electrical power to your computer.

### Required Tools

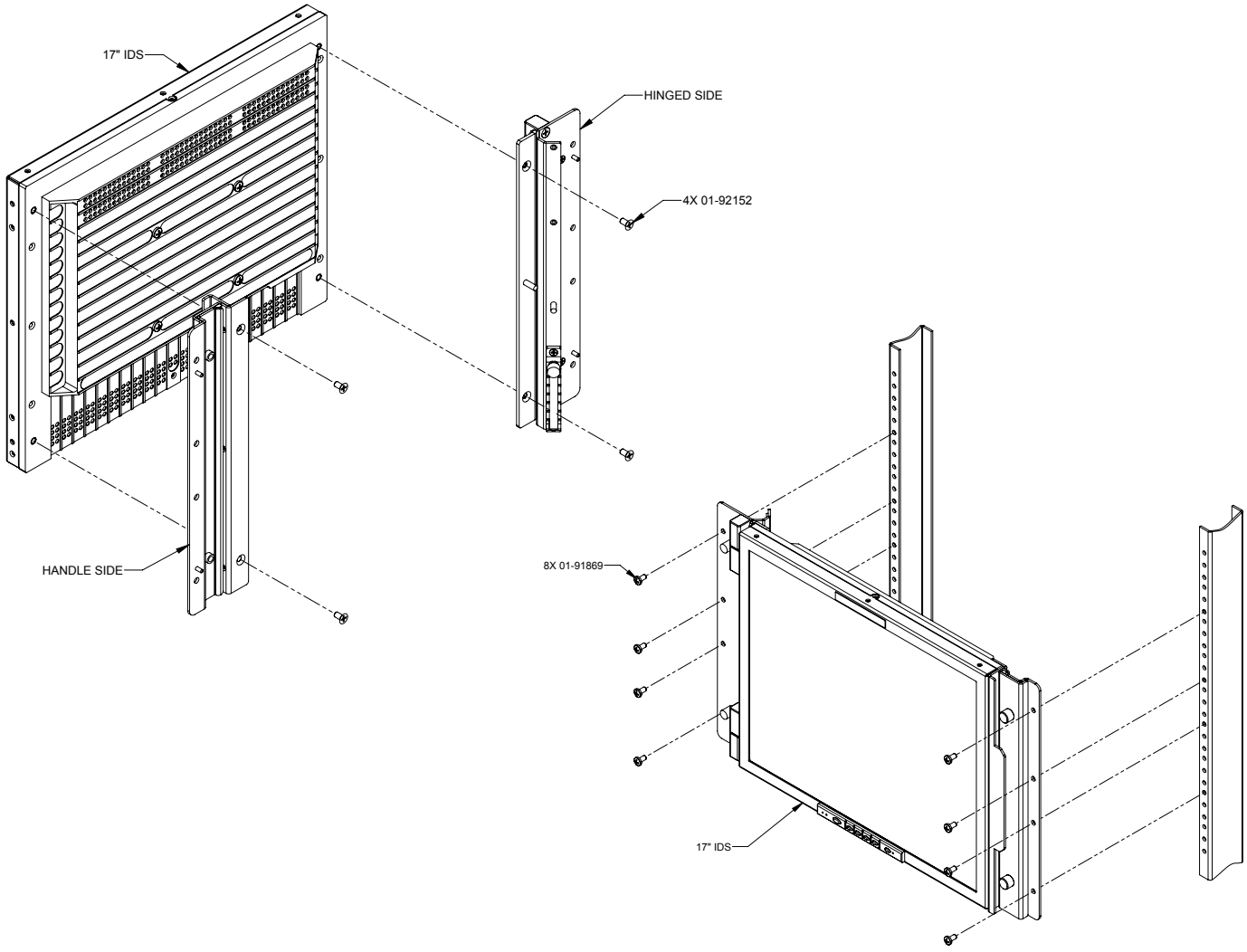
- Philips Screwdriver
- Second pair of hands for lifting and final mounting steps

### Hardware Key

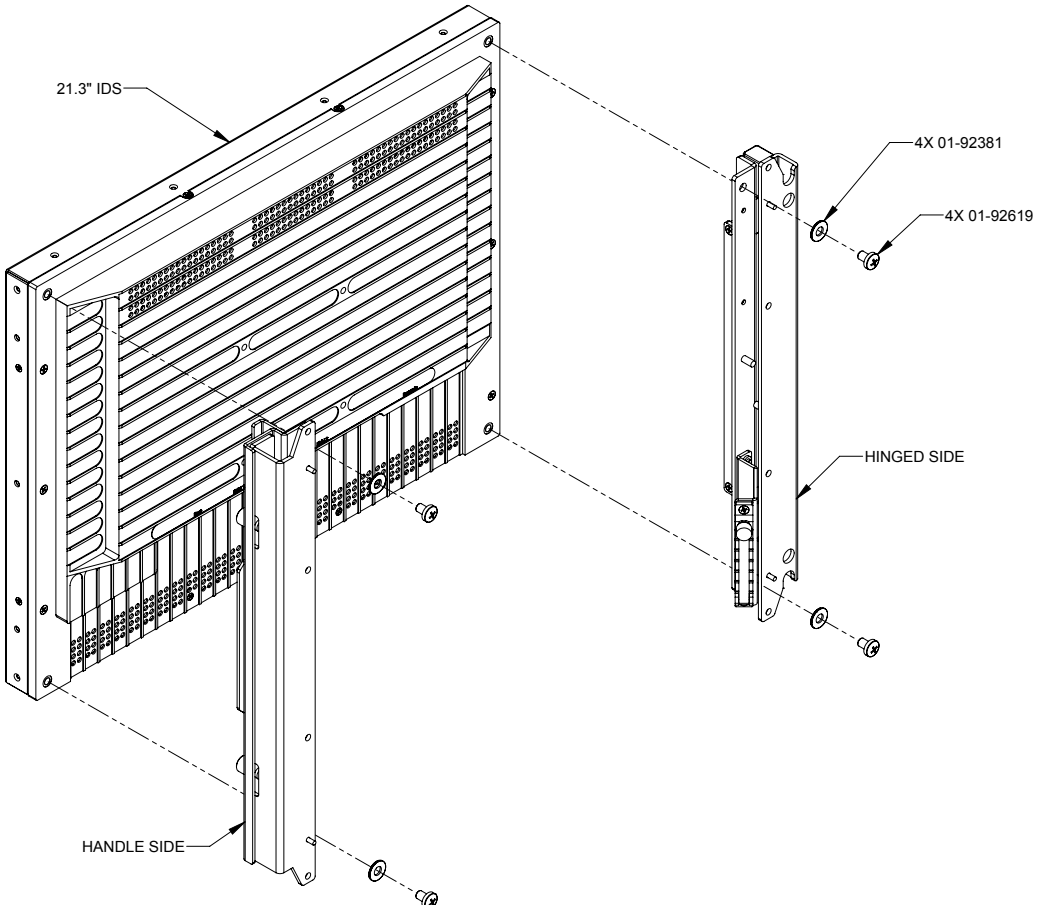
- 01-92152 Flat head, Philips,10-32 x .375 IN
- 01-92381 Washer, Stainless steel , for screw size 1/4, .281 (Inner diameter) x .625 (Outer Diameter) x .05 to .08 (thickness)
- 01-92619 Pan head, Philips, 1/4-28 X 0.375 IN
- 01-91872 Washer, Stainless steel, for #10 screw size, .22 (Inner diameter) x .44 (Outer Diameter) x .03 to .07 (thickness)
- 01-91869 Pan head, Philips, 10-32 x .375 IN

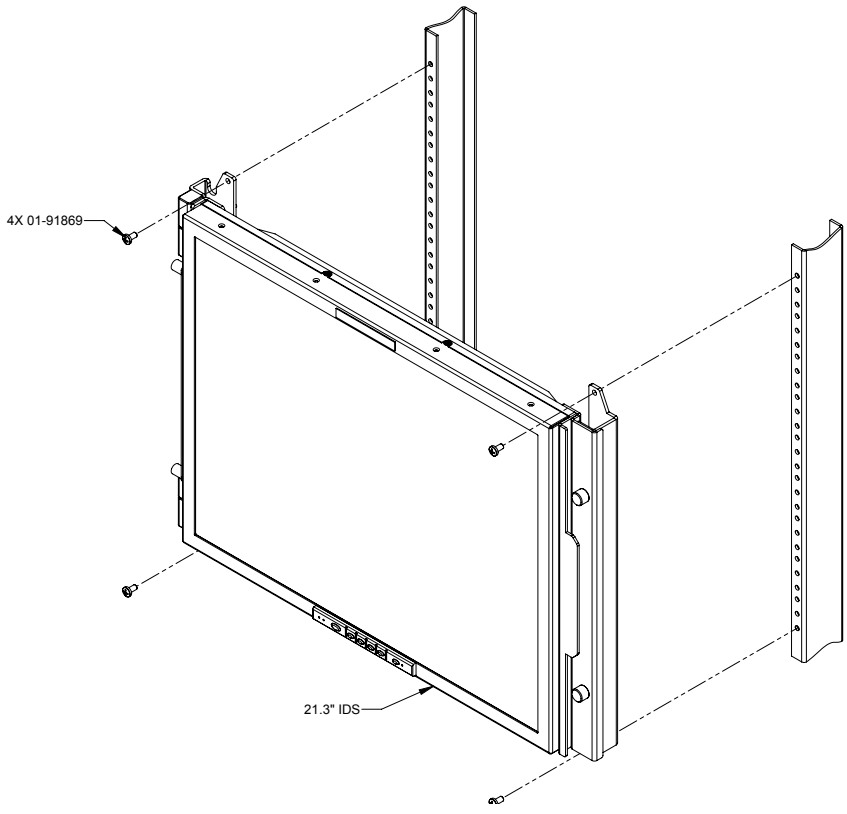
## 2.1 Installation Schematics

### 2.1.1 Schematic FOR IDS17 - Static Mount

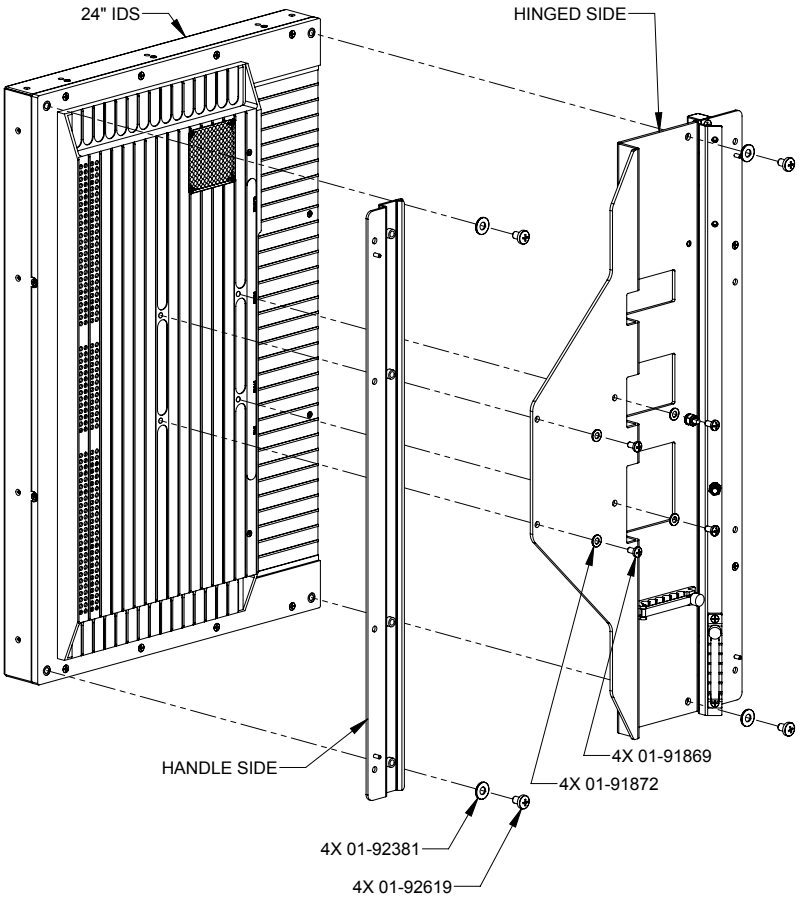


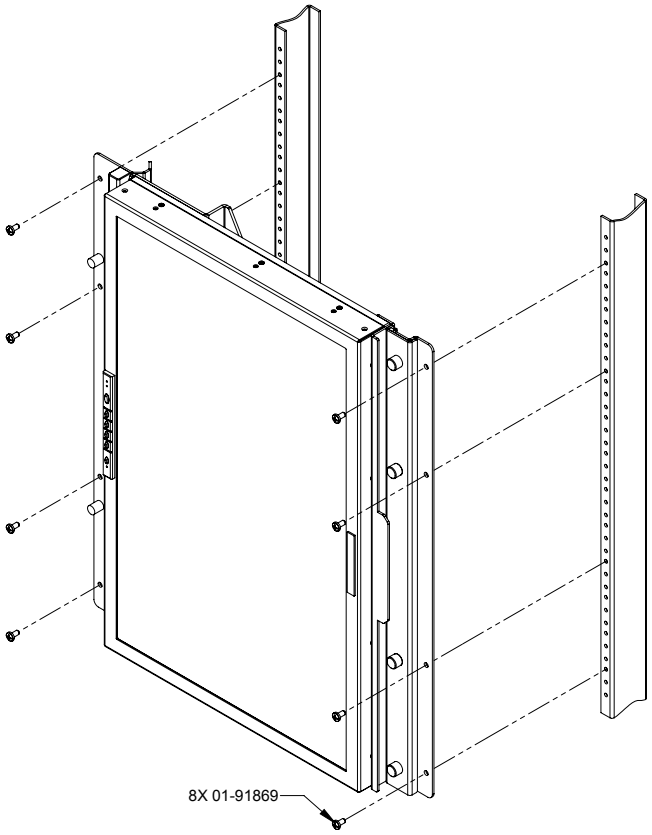
## 2.1.2 Schematic FOR IDS21 - Static Mount



## 2.1.3 Schematic FOR IDS24 - Hinge Mount



## 2.2 Installation Walkthrough

## Installation Instructions for Static and Hinged Mounting Systems

*NOTE: Refer to the schematics on the previous pages for your respective display size for visual affirmation and mounting rail orientation.*

*WARNING: Max Screw Depth 3/8" Hardware exceeding max screw depth could damage the display.*

### 2.2.1 Static Mount Installation

For help with installation follow these steps and refer to the schematic for your 17", 21", or 24" IDS

**Step 1 - Clear a safe space to work and locate hardware & mounting rails**

The first step in mounting the IDS display is clearing a safe space to rest the monitor, screen side down and collecting the parts and hardware you will need. After laying the monitor screen-down within the the workspace prepared, locate the two mounting rails that have been provided with the IDS display unit. These will serve as a harness for the display and the rails that will be secured directly to the mount assembly where the monitor will rest.

**Step 2 - Attach the Mounting Rails to the IDS**

With the monitor, mounting rails, and hardware, position the rails so that the Guide Pins* face the installer, and away from the IDS. With this orientation, attach the two mounting rails to the back side of the unit using the provided hardware; or fasteners that match specifications. The nuts and screws should be tightened finger-tight. When both of the rails are firmly secured to the IDS display, proceed to the next step.

Test - Be sure that mounting rails are securely fastened to the display before lifting the unit.

**Step 3 - Lift the IDS into postion and Prepare to Mount**

Now that the mounting rails are securely fastened to the IDS, the monitor is prepared to be mounted to the desired position on a mount assembly. With the aid of a second person for assistance, lift the IDS into place. With the aid of another installer and the guide pins, guide the monitor into place on the mounting assembly.

**Step 4 - Attach the Harnessed IDS to Mount**

Securely attach the monitor, with mounting rails installed, to the chassis of the mount assembly using the appropriate washers and screws as depicted in the schematic diagram. Make any necessary height adjustments as needed and ensure that the display is securely installed and all hardware is finger-tight.

**Step 5 - Proceed Connections & Setup**

Be sure that the video ports and power jack on the back of the monitor have not been obstructed.

You have succesfully mounted the IDS and are now ready to setup and operate the display. Continue to the next section.

If you have further questions regarding mounting, please refer to the troubleshooting or FAQ sections in this manual for further assistance.

### 2.2.2 Hinged Mount Installation

The installation for a hinged IDS mount follows the same steps as the instructions above for the static mount installation. The major three differences are: the larger hinged mounting rail, an increased number of fastening locations for additional support with the hinged mounting feature, and different hardware used for attachment.

The hinged mounting rail comes equipped with a sturdy hinge assembly and braided metal safety leash. It provides the same easy installation experience as the static rails, with guide pins for installation and convenient cable management built right in.

#### Static Rail Mount Parts & Hardware

- 2 Mounting Rails
- 4 x 01-92381, 4 x 01-92382 (Washers)
- 4 x 01-92619 (Screws)
- 4 or 8 01-91689 (Depending on Monitor, refer to schematic)

*NOTE: Mounting rails are equipped with guide pins to assist with spacing and final installation of display to mounting assembly.*

**GUIDE PIN - The Guide Pins are small cylinder shaped metal rods that protrude from the Mounting Rails to provide support and reference guide when attaching the display to the mount.*

#### Hinged Rail Mount Parts & Hardware

- 2 x Mounting Rails (1 Static + 1 Hinged)
- 4 x 01-92381, 4 x 01-91872 (Washers)
- 4 x 01-92619, 4 x 01-92869 (Screws)
- 4 or 8 01-91689 (Depending on Monitor, refer to schematic)

# 3.0 CONNECTIONS & SETUP

**This section will provide information and assistance with the following topics:**

- Cable connections for power and video input
- Setting up touch panel functionality with the display
- Software and Driver information for touch panel use

### Preparations

In preparation to setting up and connecting the IDS, turn off the electrical power to your computer.

### Required Cables/Connectors

- Power Cord (Standard)
- DVI-I Cable (Supports Digital + Analog)
- USB Type B interface connector (For Touch Screen functionality)

*NOTE: The IDS will accept a standard DVI connector but will no longer support analog signals as offered by the onboard video processing engine.*

*NOTE: If the Touch Screen option has been purchased for the IDS, ongoing communication between the host computer and monitor is required via USB type B (picture above).*

## 3.1 Connecting and Setting Up the IDS display

**Step 1 - Connect the power cord to the monitor, and plug the IDS into a power outlet**

Now that the IDS has been successfully installed, it is time to connect the monitor to a power source. Once the power cable has been inserted into the IDS, connect the display to a power outlet.

Though there is no incoming video signal, the monitor now has power. In the center of the monitor there will be a notification that reads “NO SYNC, PLEASE CHECK CABLE.” Proceed to connecting the display to a video source.

**Step 2 - Connect the IDS to video source via DVI-I cable**

In addition to power, the display needs an incoming signal from a host computer. The host computer outputs the signal and information that the user views on the display. Connect the display to the host computer via DVI-I cable (as seen to the right in Diagram 1A).

Note - A standard DVI-D cable (Diagram 1B) will broadcast a digital signal; however, it will not support an incoming analog source. The monitor has now been supplied with power and an incoming signal.

**Step 3 - (For Touch Panel Use) - This cabling step is required for Touch Panel Operation Connect the IDS to host computer via USB Type B interface.**

Operation of the touch panel functions on the IDS display requires ongoing communication with the host computer via RS232 communications over the USB Type B connector.

Insert the male USB Type B connector (as shown in Diagram B) into the the female USB Type B receptable jack on the back of the IDS display. On the other end of the USB interface cable is a USB Type A connector. Connect this to a Type A jack on the host computer.

Once the display has been connected to a host computer via the USB Type B connector, there will be communication between the IDS panel and the host computer.

**Step 4 - Checking for an incoming signal**

The IDS now has power and a connection to a host computer. Turn on the computer to confirm that the display is receiving an incoming video signal. The LED channel indicator as well as the Status LED indicator on the control panel at the bottom of the front of the display will both turn green.

If no image appears on the screen, toggle to the displays other channel.

The monitor will automatically default to digital signal. If the incoming signal is analog, please follow the steps in the Configuration Screen subsection located in this manual’s Operations section for directions to toggle the channel type to analog.

For additional video signal setup: repeat steps 2 and 4 for the new incoming signal.

Additional USB Type B interface communication is needed for Touch Screen Functionality. Direction and steps for Touch Panel Setup can be found in the following section.

**Setup Complete** - The Z Microsystems IDS monitor is now setup and connected to a video source.

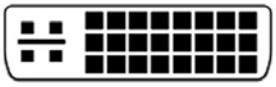
## Connector Reference Diagrams

### Video

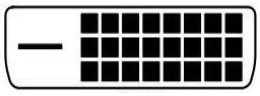
BNC Plug (NTSC)

BNC Jack (NTSC)

DVI-I (Digital + Analog)



Standard DVI-D (Digital Only) (Single + Dual Link)



### USB Communication

USB-B Plug

USB-B Jack

USB-A Plug

USB-A Jack

## 3.2 Touch Panel Setup

### Preparations

In preparation to setting up the touch panel functionality on the IDS, turn off the electrical power to your computer.

*NOTE: If the touch screen option has been purchased for the IDS, the touch screen manufacturer's software must first be installed on the computer being used with the IDS. Follow manufacturer's instructions and user manual for software installation and use.*

### Required Software & Drivers

- FTDI RS232-USB Bridge Driver
- Microchip TSHARC Touch Panel Driver

### Required Cables/Connectors

- USB Type B interface connector

## Touch Screen setup

Z Microsystems IDS Displays offer a touch screen interface option with Resistive Touch technology. The displays utilize a Microchip 'TSHARC' touch screen controller chip and communicate with a host computer using serial commands via the USB Type B physical interface. Z Microsystems electrical architecture uses the same USB port to both upload firmware and communicate to the resistive touch panel display.

To access the IDS touch screen functionality, the USB bridge and Microchip 'TSHARC' Touch Panel drivers must both be installed on a host computer. Additionally, a USB cable must remain connected between the host computer and the Z Microsystem's display for ongoing communication.

Copies of the necessary drivers can be found on the Installation Disc provided with your IDS display, as well as using the provided links in the following setup guide. A list of the latest driver versions and links to manufacturer's websites can also be found at Z Microsystem's website.

***http://www.zmicro.com/downloads/drivers.html***

## Setup Process for Touch Panel

Complete Cabling Step 3 in Connections & Setup and then Proceed.

### Step 1 - Download and Install RS232 over USB drivers

Z Microsystem's touch panel driver communicates to a host computer via a RS232 over USB bridge. In order to communicate with the touch panel, you must first install the FTDI RS232-USB bridge driver from the following link:

***http://www.ftdichip.com/Drivers/VCP.htm***
OR
***http://www.zmicro.com/downloads/drivers.html***

*WINDOWS USERS: For ease and compatability most Microsoft Windows users, including Windows 7 users should select the Setup.exe labelled as a Win7/Vista/WinXP driver. (It is distinguished in the 'Notes' column as a 'Third party Driver').*

An Installation guide and additional drivers for various operating systems are also available from the FTDI website.

Once installed, the driver will assign two Virtual Communication Ports (VCP) when the display is connected to the host computer via the USB Type B cable. The first Virtual Comm. Port is for serial communication to the display controller. The second VCP is assigned to the touch panel control.

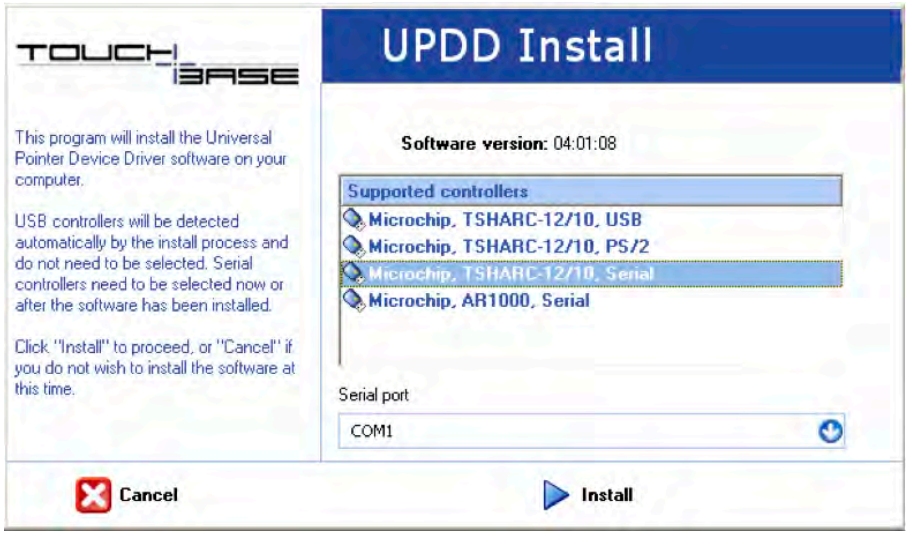
### Step 2 - Download and Install Microchip TSHARC Touch Panel driver

Once the RS232 over USB drivers are installed from Step 1 above, procee to download the touch panel drivers from the following link:

***http://www.microchip.com/stellent/idcplg?IdcService=SS_GET_PAGE&nodeId=2830***

Select the appropriate driver for your operating system from the table provided. (i.e. Windows, Linux, Mac)

## Setup Process for Touch Panel (Continued)




### Step 3 - Install and Setting the TSHARC Touch Panel Driver COM port

Select Microchip, TSHARC-X/X, Serial Option and the respective Port COM setting. Once complete, Click on the Install button.
Upon successful installation of driver, reboot computer if necessary. If the touch panel is not responding, open the 'Universal Pointer Device Driver (UPDD)' Control Panel and update the COM port setting. Indicate which Port number your touch panel is connected to and test again.

*NOTE: If the Touch Panel is not responding, open the 'Universal Pointer Device Driver (UPDD)' Control Panel and update the COM port setting.*

### Step 4 - Configuring the TSHARC Touch Panel driver

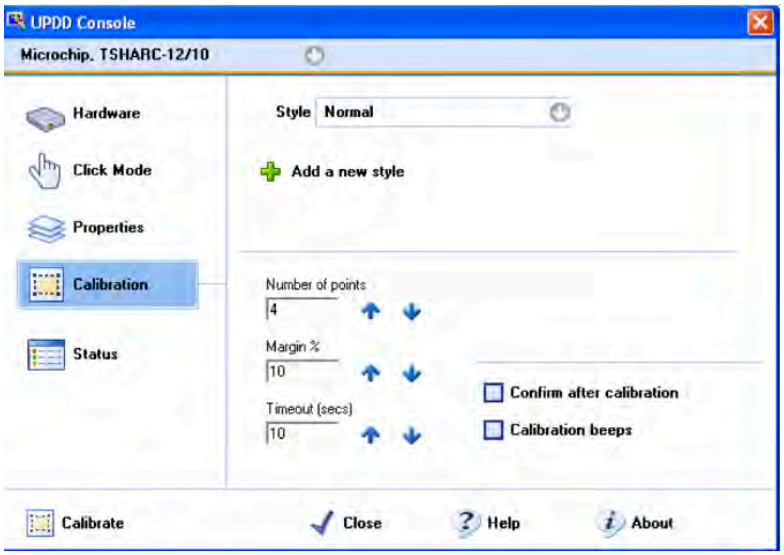
For basic Touch Panel operation, proceed to the 'Universal Pointer Device Driver (UPDD)' Control Panel. The UPDD control panel allows the user to set calibration and other touch panel device properties. Complete the following steps for key setup and calibration requirements:

To use the Touch Panel with Click and Drag settings - Select "Click Mode" tab from the menu on the left, then verify the hardware is configured to Click and Drag in the pull down menu.

*NOTE: If Touch Panel is not responding accurately, in addition to the Microchip Touch Screen Controller calibration, the Touch Panel may need to be calibrated through the calibration resource in your operating system.*

### Step 5 - Calibration of the Touch Screen Controller

Select the "Calibrate" tab and follow the on-screen guide to ensure the touch screen controller is properly calibrated for your display. Calibration window is illustrated below.

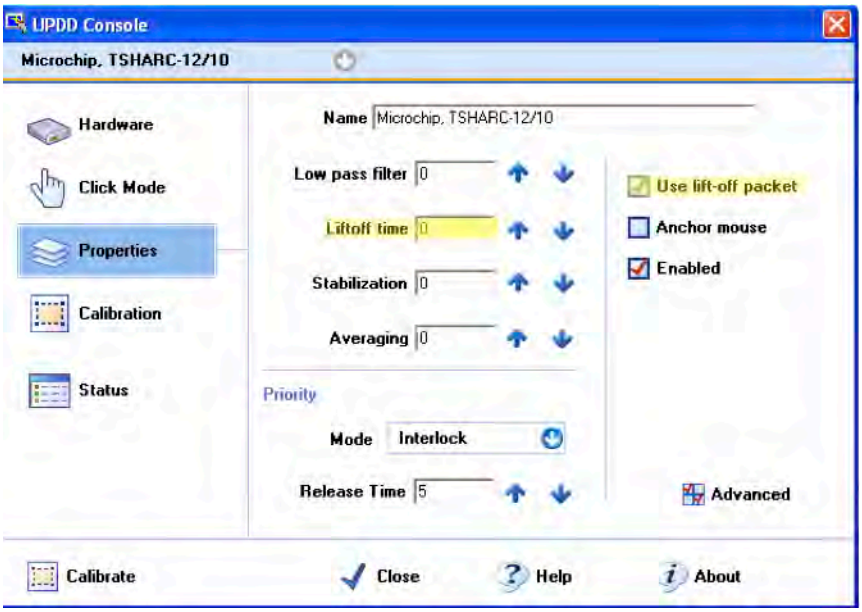


## Setup Process for Touch Panel (Continued)

User may also need to calibrate the touch screen panel using the calibration resource specific to their respective operating system (i.e. Windows, Linux, Mac)

**Continuous Touch Panel Sensing Option**

Some users may require continuous touch panel sensing. The Default settings for the UPDD driver are set to use lift-off packets that prevent sustained press and sensing. If the desired functionality of the touch panels requires continuous sensing of touch, proceed to 'disable' life-off packet by un-checking the lift-off packet option, or by adjusting the lift-off time to a value of '0' as shown below.




Congratulations your Z Microsystems IDS display is now connected, calibrated, and ready for Touch Panel operations!

**Additional Setup Assistance**

For further assistance with touch screen functionality, connectivity, calibration, or other technical issues please refer to the Troubleshooting and FAQ sections located in this manual. Z Microsystems customer service can also be reached at +1 (858) 831-7040 or via email at *techsupport@zmicro.com*.

**Additional Product Support**

For additional information on the **IDS** platform or the **Ground Control Station (GCS) Display Series** featuring customizable quick release locking features for rapid panel replacement and fast transport features, visit the Z Microsystems website at ***www.zmicro.com***, or contact your Z Microsystems sales representative.

# 4.0 Operations

**This section will provide information and assistance with the following topics:**

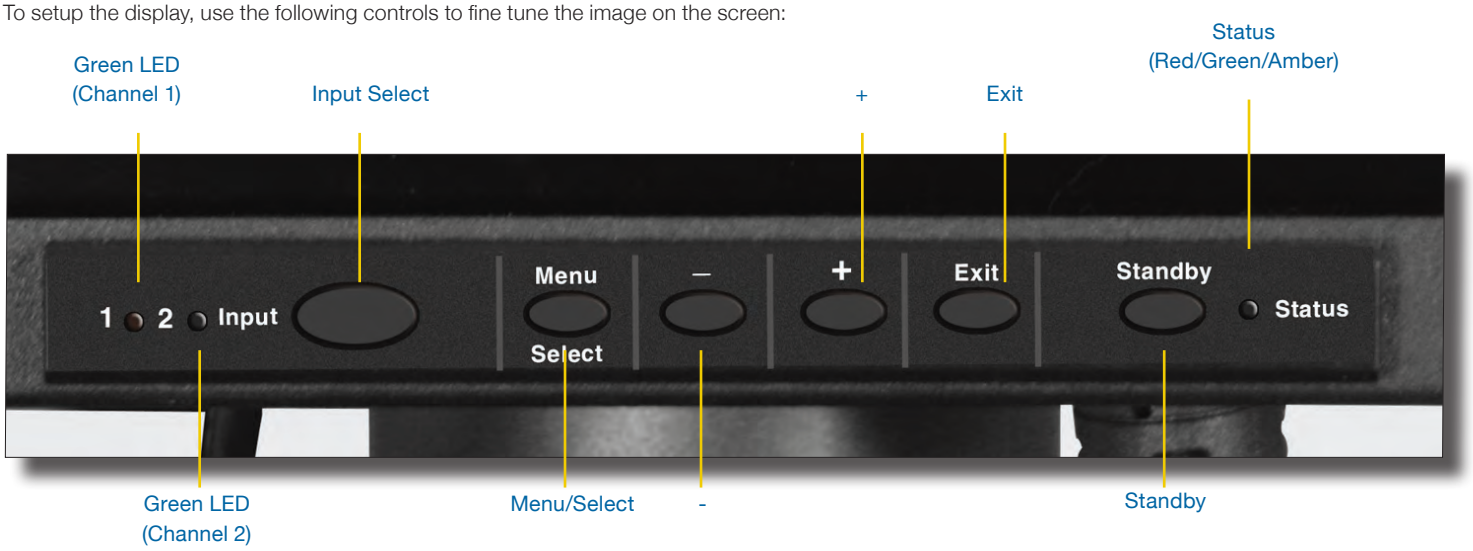
- Front Display Controls
- Navigating the On-Screen Menus
- Menu Configuration and Settings

## 4.1 Front Display Controls

### Push Button Controls

The IDS features push-button controls on the lower front bezel of the monitor casing. These buttons provide easy access to the On-Screen Display (OSD) allowing the user to navigate and adjust image settings.

To setup the display, use the following controls to fine tune the image on the screen:




**Button Functionality Description Table:**

| Display Key | Input Select | Menu/Select | - | + | Exit | Standby |
|---|---|---|---|---|---|---|
| **Key Function** | Toggles between available channels with active incoming signal. corresponds with illuminated Channel LEDs on the IDS display. | Activates On-Screen Display. Activates/ Deactivates Selected Menu Item. (Changes are saved as they are modified) | Moves to previous menu item. Decreases value of the Selected Menu Item. | Moves to next menu item. Increases value of the activated menu item. | Exits from On-Screen Display main menu or returns from submenu to main menu. (Changes are saved as they are modified) | Hold down to turn the backlight on and off. (Power Saving Option) |

### Channels LEDs

1 — Green — Input video #1 selected (DVI-I)

2 — Green — Input video #2 selected (DVI-I)

### Status LED

Green — power and signal

Amber — power and no signal

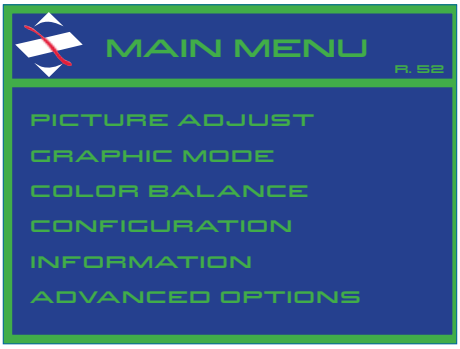
Red - alarm

Off — Standby mode / no power.

## 4.2 On-Screen Menus

*NOTE: The control buttons allow the user to control backlight operations; to store settings, and to revert to factory-saved settings.*

### 4.2.1 Main Menu




To access the On-Screen Display main menu, press the menu button on the front of the panel. All IDS functions are controlled using the Main Menu's subtopics.

These submenus can be accessed for adjustments and information via the display keys on the bottom panel of the display. See the sections below for specifics and operation of the submenus.

### 4.2.2 Main Screen Picture Adjust

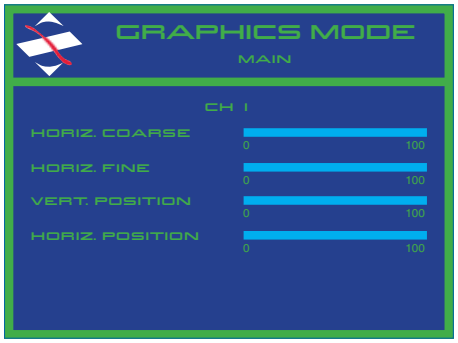

To adjust the display brightness and contrast use the + and - buttons to highlight the "Picture Adjust" option. Press the "Menu" button to access the submenu.

Navigate to the desired option using the + and - buttons. Use the Menu button to activate the option. (Background color of the slider will change when the option is selected.) Use the + and - buttons to increase or decrease the value. Press Menu button again to deactivate the option. This will save any changes.

(NOTE: Contrast is not available for digital signal images and "Main Contrast" option will be grayed out and unavailable.)

### 4.2.3 Main Screen Graphics Mode

To make adjustments to the display images positioning, width, or the video sampling clock use the + and - buttons to highlight the "Graphics Mode" submenu. Press the "Menu" button to access the "Graphics Mode" submenu.




The "Graphics Mode" menu is used to adjust the positioning of the image. Highlight the desired option using the + and - button. Use the Menu button to activate the option. (Background color of the slider will change.) Use the + and - buttons to increase or decrease the value of the selected option. Adjust the image to desired specifications and press menu again when finished to deactivate the option.

The "Horz Coarse" option adjusts the horizontal width of the image.

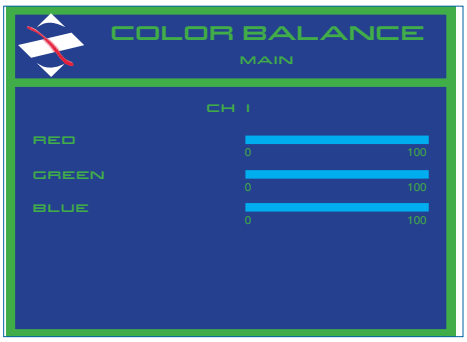
The "Horz Fine" option adjusts the phase of the video sampling clock.

Press "Exit" to return to the Main Menu. The new adjustments will be applied automatically.

(NOTE: The Horz Coarse and Horz Fine options are not applicable for digital channels).

### 4.2.4 Main Screen Color Balance

To adjust the color of the display use the + and - buttons to highlight the "Color Balance" submenu. Press the "Menu" button to access the "Color Balance" submenu.

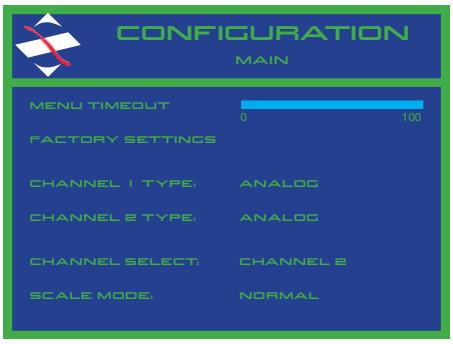



Highlight the color balance submenu using the + and - buttons. Use the Menu button to activate the desired option. (Background color of the slider will change.) Use the + and - buttons to increase or decrease the value. Press menu again to deactivate the option.

Press "Exit" to return to the Main Menu. The new adjustments will be applied automatically.

(NOTE: Color Balance menu topics Red, Green, and Blue adjustments are available only for analog signal images. Menu topics will be unavailable and grayed out for digital signals)

## 4.2.5 Configuration Screen




**Menu Timeout:**
This is the amount of time the menu will remain displayed before it times out and exits automatically. When the menu times out, it disappears from the main screen.

**Reset Default Settings:**
Resets all Main Menu settings to the factory default settings.

**Channel Type:**
Channel Type sets the DVI-I Channel to accept either analog or digital input.

**Channel Select:**
The IDS Display has two channel options. Highlight “Channel Select” and press Menu button to change channels.

**Scale Mode:**
There are three scale modes: NORMAL, SCALED ASPECT RATIO (SAR), and NO SCALE. NORMAL mode scales the source image to the full panel size and aspect ratio. SAR mode will keep the aspect ratio of the incoming signal and use the maximum image size possible for the source aspect ratio. NO SCALE mode uses the native source resolution and aspect ratio and displays the image without scaling. SAR and NO SCALE images are centered on the panel with black bars on the sides where no image is present.

## 4.2.6 Advanced Options Screen


These options are for future development of Z Micro proprietary video processing engine technology.

**RTEV Settings:**
Not available at this time. Please contact your Z Micro Sales Rep for more information.

**RTEV Geometry:**
Not available at this time.Please contact your Z Micro Sales Rep for more information.

## 4.2.7 OSD OPTIONS


OSD Options allows you to modify OSD menu settings to adjust position and transparency of the easy access On-Screen Display.

**Vert Position:**
Vert Position allows the user to change the position of the OSD screen in vertical position.

**Horiz Position:**
Horiz Position allows the user to change the position of the OSD screen in horizontal position.

**OSD Transparency:**
OSD Transparency allows the user to change the transparency of the OSD screen.

## 4.2.8 Main Screen Information


Use the + and - buttons to highlight the “Information” option. Press the “Menu” button to access the “Information” submenu.

Within this submenu, the user can view firmware version, build date, incoming video signals, and display operating temperature.

Temperature displayed is the onboard circuit-board temperature. Temperature variation is common and expected.

*WARNING: It is advised to contact Z Microsystems customer support if the temperature exceeds 65C.*

# 5.0 TROUBLESHOOTING THE IDS SERIES

## 5.1 Troubleshooting Topics

This section will provide information and assistance with the following topics:

- Troubleshooting Topics for the IDS Series
- Frequently Asked Questions about the IDS Series

## No Main Display Image

If the cable from the computer to the display is secure, determine the color of the standby LED and follow the appropriate procedure below.

**Black -** Cause: If the status LED is black (unlit), the unit is on standby or is not receiving power.

**Recovery:**
- Press and hold standby button.
- Ensure the power cable is plugged into the source.
- Connect the power cable to a AC outlet. Ensure the AC outlet is active.
- Turn on the display's backlight by pressing the standby button.

**Amber -** Cause: If the status LED is amber, there is power but no video signal is being received.

**Recovery:**
- If Video 1 or Video 2 is selected, ensure there is a video signal coming into the selected channel.
- Ensure there is a video signal coming from the computer.
- Be sure the channel type is set correctly for the video signal that is provided by the graphics card. Confirm that the display is setup to analog or digital and verify the outgoing signal from the host computer matches this signal type.

**Green -** Cause: When the status LED is green, there is both power and a video signal. If there is still no image, follow these recovery steps:

**Recovery:**
- Ensure the video signal coming from the computer is not a black screen.
- Ensure the Channel Type is selected corresponding to the incoming video signal.
- Ensure the Channel Type under "Configuration" in the OSD menu corresponds to the signal type (i.e. ANALOG or DIGITAL).
- Make sure the right cable is being used for the incoming video signal. DVI-D will not support an ANALOG signal.
- Try a known supported video source resolution and frequency as listed in the Appendix for specifications.
- **If these Recovery criteria have been met and the issue is not resolved there is potentially a hardware failure. (Tech Support pg. 20)**

## Display Image has Poor Color or Brightness (Analog Signal Issue)

Possibe Recovery:

Red, Green, and Blue gains can be adjusted from the Color Balance menu topic within the OSD Main Menu. Best quality color is generally achieved when red, green, and blue gains are balanced and all at similar levels. In the Picture Adjust submenu, ensure "Main Brightness" setting is at a sufficient level.

## Display Image Has Vertical Bars (Analog Signal Issue)

Possibe Recovery:

If the main image begins to display vertical bars, adjust the "Horz Coarse". From the Main Menu, use the '+' and '-' buttons to highlight the "Graphics Mode" option. Select the "Graphics Mode" submenu and use the left and right arrow buttons to adjust the screen until the number of bars is reduced. Continue adjusting one step at a time until the bars are no longer visible.

Make sure that the connectors are seated properly on the back of the display. "Horz Coarse" option is only available for Analog video signals.

## Display Image Has Horizontal Bars (Analog Signal Issue)

Possible Recovery:

If the main image begins to display horizontal bars, check that the video input cable is securely attached to the back of the monitor. If this does not resolve the issue there is a chance the connector cable is damaged or defective. Try replacing the DVI cable with a new one to see if the bars disappear.

## Display Image Appears Fuzzy / Poor Quality (Analog Signal Issue)

Possible Recovery:

If the main image begins to appear fuzzy or “noisy”, adjust the “Horz Fine” until it is reduced. The “Horz Fine” option adjusts the phase of the video sampling clock. To access the “Horz Fine” submenu from the Main Menu, use the ‘+’ and ‘-’ arrow buttons to highlight the “Graphics Mode” option. Press the “Menu” button to access the “Graphics Mode” submenu. The “Horz Fine” and “Horz Coarse” options are only availabe to ANALOG video sources.

If the configuration screen reads ANALOG for the Channel Type and the user is expecting a DIGITAL signal, then the display may not be receiving a digital signal that it can understand. This problem may result from an incompatibility in the graphics card. The source graphics card may not be certified to full DVI-I specification and may be defaulting to an analog signal. One option is to change the configuration in the graphics card to transmit only a DVI-D signal. A second option is to use a DVI-D cable to connect the host system to the display.

Possible Recovery:

In some cases, poor image quality may be caused by a break in the connection. Check for potential breaks by looking for damage or frays to the cable, particularly near connector heads. Also check connector pins to ensure that they are properly aligned to fit into the designated connector jack. If the problem persists, try replacing the video cable.

Possible Recovery:

Some electronics and cellular devices generate electrical/radio interference. The problem may result from close proximity to such a device. Be sure that all items that may cause interference are kept away from the display.

Possible Recovery:

Low signal level is a potential cause for poor image quality. If the previous processes have not resolved the issue, try connecting the display to a video source that provides a clear picture to another display. This will rule out variables and narrow troubleshooting direction.

Possible Recovery:

Make sure that video cables are properly seated on the back of the display panel. A bad seating can have the RGB connectors misaligned. These RGB options are only available for Analog video signals. In the event that these color adjustments have been changed and are out of balance - Reset menu settings to default.

## Display Image is Not Centered

If the main image is not centered on the display, access the “Graphics Mode” menu in the OSD. Using the ‘+’ and ‘-’ buttons adjust the ‘Vert’ and ‘Horz’ position until image is appropriately centered.

If the OSD is not positioned in a desired location, an independent menu for OSD options can be found within the “Advanced Options” menu.

## Problems with Analog Signal Resolution at 1920x1200@60

Possible Recovery:

This issue is generally resolved by designating the correct signal format (digital or analog) under Channel Type in the Configurations OSD menu. This communicates to the display the correct Extended Display Identification Data (EDID) information. The settings are passed on to the Graphics Card and 1920x1200@60 reduced blankoing is produced by the graphics card.

Be sure that the EDID information is passed to the graphics card and that your graphics card recognizes the IDS Display as a “ZMicro display.”

## Touch Screen Not Responding Accurately

The Touch Screen may require calibration from time to time. There are two forms of calibration, one is the touch panel controller in the UPDD control panel as discussed in the Touch Panel Setup installation guide. Another method is direct contact with the display through a utility built into the operating system on your host computer.

## Other Touch Screen Aesthetics

### Image appears Fuzzy

In the event that the image appears fuzzy, this may be a by-product of the resistive touch screen technology. With the resistive touch screen over the LCD display there is a reduction in transmissivity of the LCD of 80%. This is normal and once again is a by-product of the resistive touch technology.

### Touch Screen Anomalous Rippling

As an industry standard: resistive touch screen technology has produced a standard cosmetic issue referred to as “rippling.” Rippling is due to the non-uniform expansion rate of of the lower layers of glass that make up the resistive touch screen assembly. This issue is inherent to resistive touch technology and is a known issue.

NOTE: The functionality of the unit is not impacted by this rippling and in most cases can only be detected when the display’s backlight has been turned off.

# 5.2 Frequently Asked Questions

| Question: | Answer: |
|---|---|
| • Why are certain Menu Options blocked out and unavailable? | • Certain Menu Options are specific to DIGITAL or ANALOG signals. |
| • What is the purpose of the metal surrounding one of the screw threadings on the back side of the monitor? | • This surrounding metal area is for the purpose of grounding the display. |
| • How do I update my displays’s firmware? | • Updating the firmware for a display can be sensitive. Before starting this process, please review the specific configuration for your display series. Also, updating your firmware will depend on your display’s interface.<br>Does your display offer hyperterminal support?<br>Does your display use traditional RS-232 serial communications or USB? |

# 6.0 CUSTOMER SUPPORT

*NOTE: For image problems, run AUTO SETUP again before consulting this section. In most cases, AUTO SETUP can fix the problem. See Auto Setup section for details*

*NOTE: If possible, stay by the computer. The Z Microsystems Technical Support Representative may wish to go through the problem over the telephone.*

*NOTE: More help, late-breaking news, and details of the latest accesories for these products may be found on the worldwide web at www.zmicro.com*

## Technical Support

If you are unable to correct the problem yourself, contact Z Microsystems at:

Phone: (858) 831-7040
Fax: (858) 831-7001
Website: www.zmicro.com
Email: techsupport@zmicro.com

Before calling, please have available as much of the following informationa s possible:

1. Model and serial number for the label on the monitor.
2. Purchase P.O.
3. Description of the problem
4. Computer type and model
5. System configuration (hardware fitted, etc.)
6. System BIOS version number
7. Operating System and version number
8. Display driver version number
9. Video Adapter Type

## Documentation Assistance

If you are unable to find documentation for a specific product or would like to request further information, contact Z Microsystems at:

Phone: (858) 831-7039
Email: ZDoc@zmicro.com

## Customer Feedback

We value feedback on our products, their performance, problems found, and welcome all suggestions.

Please send to:

Customer Service
Z Microsystems
9820 Summers Ridge Road
San Diego, CA 92121

or www.zmicro.com

# 7.0 MAINTAINING THE IDS DISPLAY SERIES

## Cleaning the Monitor

Unplug the monitor from the power outlet before cleaning.

- The IDS Displays are constructed with either an optically bonded resistive touch screen or optically bonded Anti Reflective (AR) shield. When cleaning the screen surface, a clean, lint-free cloth must be used. Isopropyl alcohol or monitor glass cleaner may be used to clean finger prints or smudges on the monitor's screen. First, apply the cleaning solution to the clean, lint-free cloth before wiping the monitor. Do not apply the cleaning solution directly to the monitor.

*WARNING: Do not spray water or cleaning solution directly on the display. Apply first to a lint-free cloth before wiping the monitor.*

*WARNING: Do not use water to clean the LCD screen.*

*CAUTION: Do not use benzene, thinner, ammonia or any volatile substance to clean the monitor screen or housing. These chemicals may damage the monitor.*

**WARNING**

Be sure to turn off the power before you perform any maintenance on the monitor.

**WARNING**

To avoid risk of electric shock, do not disassemble the monitor cabinet. Users cannot service the monitor. User maintenance is restricted to cleaning as explained below.

# 8.0 REPLACING PARTS

If the Z Microsystems Technical Support Engineer determines that the product needs to be replaced, a Customer Service Representative will issue a Return Material Authorization (RMA) number.

An RMA number is required to return a product to Z Microsystems, regardless of the reason for the return.

The Z Microsystems Customer Service Department/RMA Request Form will ask the customer to provide the following information:

- model number of the defective product
- serial number of the defective product
- firmware revision (as detailed in the "Information" section of the Main Menu
- problem with the defective product
- return "ship to" address
- the name and address of the company department to which we will send the invoice (if product is out of warranty or is different from the "ship to" address.
- phone number and e-mail address of contact
- purchase order number

### You will be given an RMA number and will be asked to send the product to:

**Z Microsystems**
ATTN.: (RMA#) It is very important to reference the RMA#
9820 Summers Ridge Road
San Diego, CA 92121

# 9.0 APPENDIX

**This section will provide information and assistance with the following topics:**

- Technical and Operational Standards for the IDS displays
- Technical Schematics for the IDS displays
- Engineering Drawings for the IDS displays

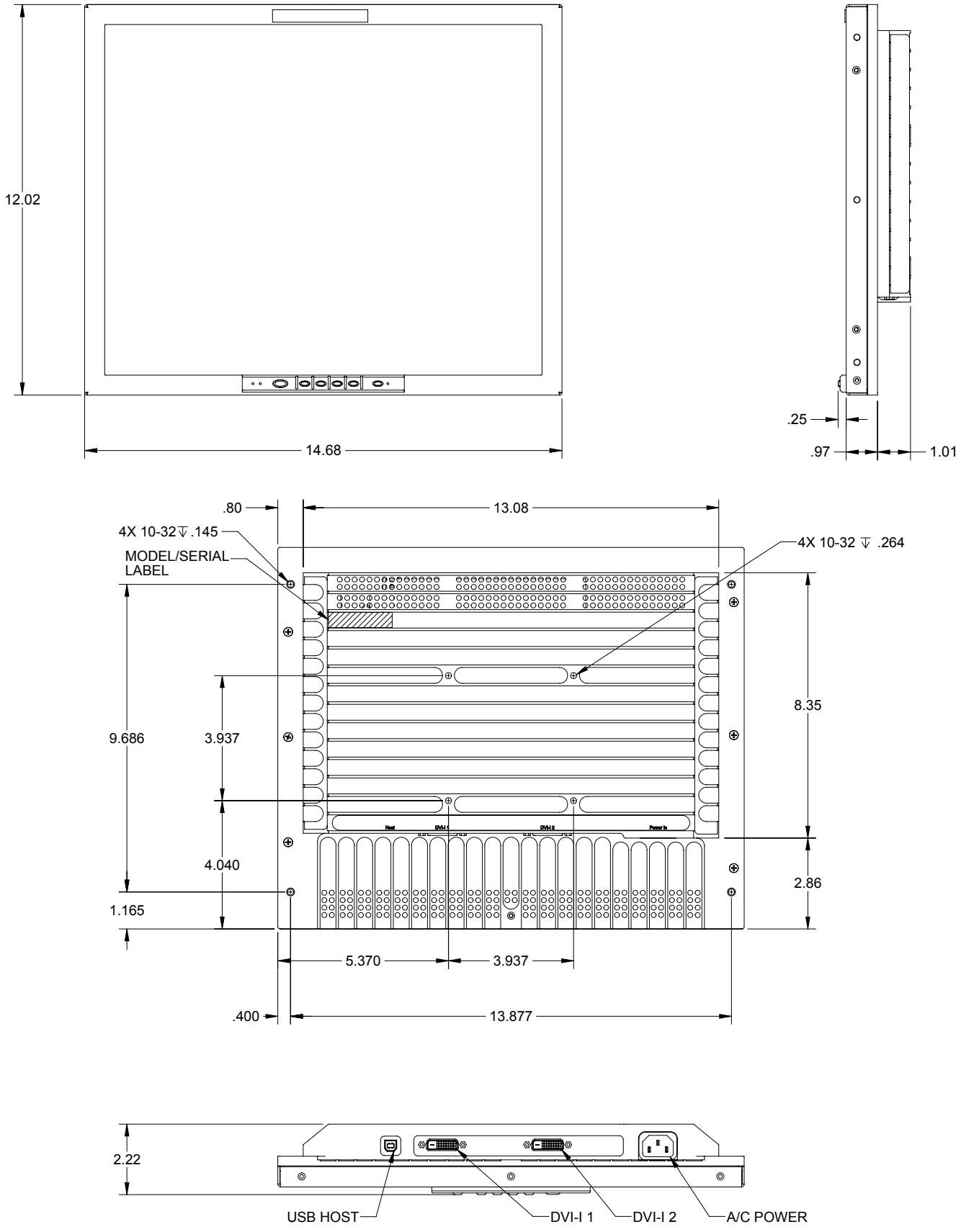
## 9.1.1 TECHNICAL SPECIFICATIONS FOR IDS 17”

The IDS Display series is meticulously engineered to be adaptable and suited for an array of field operation, as well as being designed to support a wide selection of resolutions. The specifications unique to each particular LCD can vary. These particular specifications are available through our sales department.

| | |
|---|---|
| **LCD Panel** | |
| Active Display Size | 17" |
| Native Pixels | 1280 x 1024 (1.3 Million Pixels) |
| Color Paletter | 16.7 Million |
| Viewing Angle | +/-85º Horizontal / +/- 80º Vertical |
| Controls | User accessible via Control Panel or SoftMenu |
| Options | TouchScreen, AR Shield, AG Shield |
| | Wire Mesh* |
| **Power** | |
| Power Consumption | 44W |
| Power Supply | 100-240 VAC, 2.0A input @ 50-60Hz, 400Hz |
| **Input Connectors** | |
| Display | DVI-I with optional features including analog (HD-15), NTSC/PAL (BNC), digital (DVI-I), or HDSDI (BNC) |
| Power Cable | 6' cable, 1x IEC C14 Inlet Connector Standard |
| Touch Screen Interface | 6' 9-pin DSUB provided (pins 2, 3, 5, straight through) 10' cable, DB9 |
| **Physical** | |
| Size | 12.02” H x 14.6” W x 2.17” D |
| Weight | 10.6 lbs. |

| | |
|---|---|
| **Environmental** | |
| Operating Temp | 0°C to +50°C |
| Extended Op Temp** | -20ºC to +50ºC |
| Non-Op Temp | -40ºC to +70ºC |
| Humidity | 5% to 95% Non condensing (Design Goal) |
| Non-Op Altitude | Up to 40,000 ft. |
| Operating Altitude | Up to 15,000 ft. |
| Vibration | MIL-STD-167 |
| Shock | MIL- STD 810F, 30g’s |
| Fungus | Non-Nutrients/Contaminants |
| **Reliability** | |
| MTBF | 50,000 hrs, Backlight and LCD only |
| MRRT | <30 Minutes |
| **Regulatory** | |
| Safety | UL60950<br>MIL-STD-461E, RE101 Army Limits, RE102, |
| EMI/EMC | RS101, RS103 (20v/m 2MHz and 60v/m 1GHz-18GHz), CE101, CS114, CS115, CS116 |
| **Quality/Workmanship** | |
| IPC / ISO 9001:2008 and applicable section of MIL-HDBK-454 | |
| **Supported Resolutions** | |
| 1920x1080x60Hz, 1920x1200x60Hz, 1440x900x60Hz, 1280x1024x60Hz, 1280x1024x67Hz, 1280x1024x75Hz, 1280x1024x85Hz, 1280x768x60Hz, 1280x768x75Hz, 1152x864x75Hz, 800x600x60Hz, 800x600x72Hz, 800x600x75Hz, 800x600x85Hz, 640x480x75Hz, 640x480x85Hz | |

# 9.1.2 SCHEMATIC OUTLINE FOR IDS 17”



# 9.2.1 TECHNICAL SPECIFICATIONS FOR IDS 21”

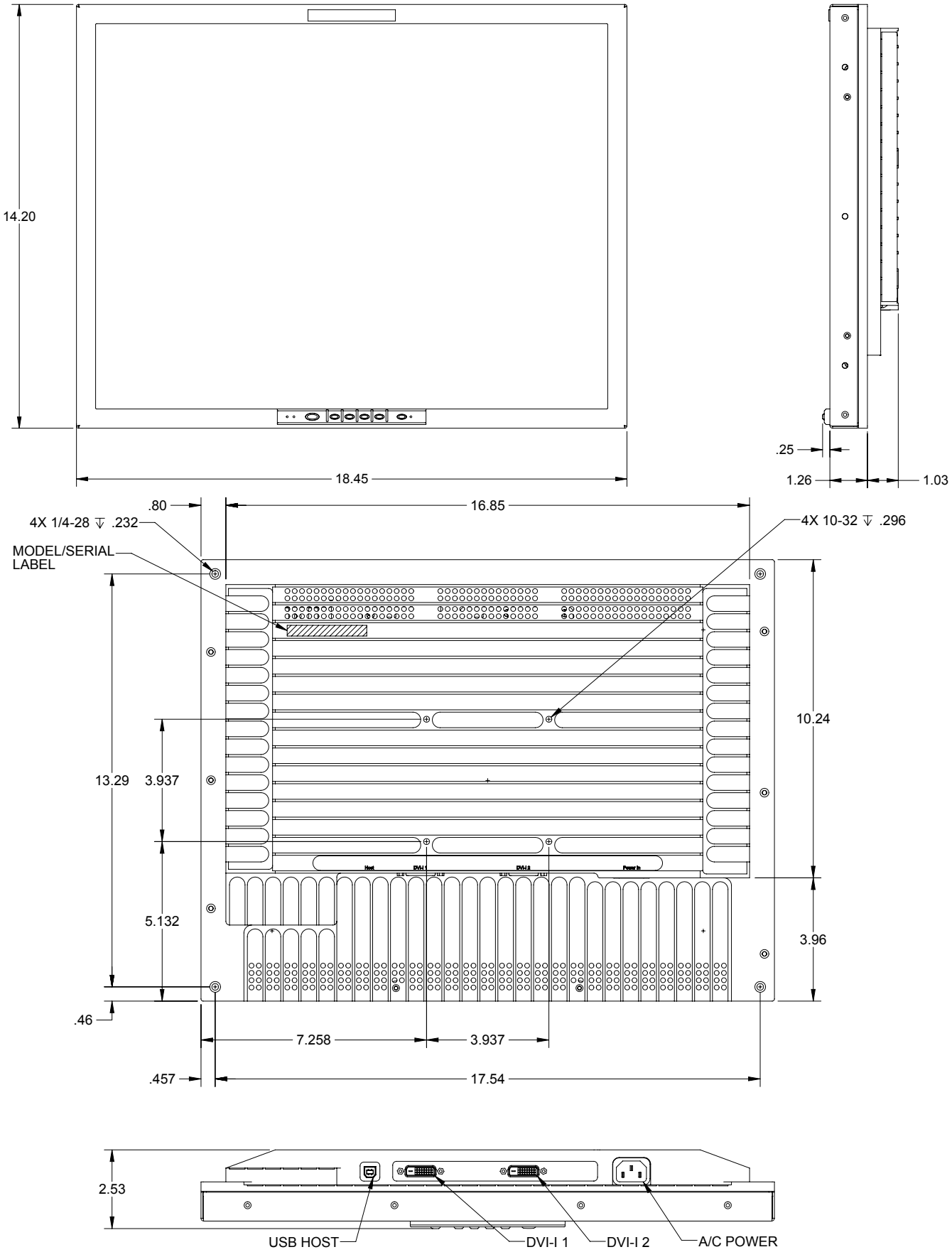
The IDS Display series is meticulously engineered to be adaptable and suited for an array of field operation, as well as being designed to support a wide selection of resolutions. The specifications unique to each particular LCD can vary. These particular specifications are available through our sales department.

| | |
|---|---|
| **LCD Panel** | |
| Active Display Size | 21.3" |
| Native Pixels | 1600 x 1200 (2 Million Pixels) |
| Color Paletter | 16.7 Million |
| Viewing Angle | Full +/-85º |
| Controls | User accessible via Control Panel or SoftMenu |
| Options | TouchScreen, AR Shield, AG Shield |
| | Wire Mesh* |
| **Power** | |
| Power Consumption | 66W |
| Power Supply | 100-240 VAC, 2.0A input @ 50-60Hz, 400Hz |
| **Input Connectors** | |
| Display | DVI-I with optional features including analog (HD-15), NTSC/PAL (BNC), digital (DVI-I), or HDSDI (BNC) |
| Power Cable | 6' cable, 1x IEC C14 Inlet Connector Standard |
| Touch Screen Interface | 6' 9-pin DSUB provided (pins 2, 3, 5, straight through) 10' cable, DB9 |
| **Physical** | |
| Size | 14.2” H x 18.45” W x 2.29” D |
| Weight | 18 lbs. |

| | |
|---|---|
| **Environmental** | |
| Operating Temp | 0°C to +50°C |
| Extended Op Temp** | -20ºC to +50ºC |
| Non-Op Temp | -40ºC to +70ºC |
| Humidity | 5% to 95% Non condensing (Design Goal) |
| Non-Op Altitude | Up to 40,000 ft. |
| Operating Altitude | Up to 15,000 ft. |
| Vibration | MIL-STD-167 |
| Shock | MIL- STD 810F, 30g's |
| Fungus | Non-Nutrients/Contaminants |
| **Reliability** | |
| MTBF | 50,000 hrs, Backlight and LCD only |
| MRRT | <30 Minutes |
| **Regulatory** | |
| Safety | UL60950<br>MIL-STD-461E, RE101 Army Limits, RE102, |
| EMI/EMC | RS101, RS103 (20v/m 2MHz and 60v/m 1GHz-18GHz), CE101, CS114, CS115, CS116 |
| **Quality/Workmanship** | |
| IPC / ISO 9001:2008 and applicable section of MIL-HDBK-454 | |

| |
|---|
| **Supported Resolutions**** |
| 1920x1080x60Hz, 1920x1200x60Hz, 1440x900x60Hz, 1280x1024x60Hz, 1280x1024x67Hz, 1280x1024x75Hz, 1280x1024x85Hz, 1280x768x60Hz, 1280x768x75Hz, 1152x864x75Hz, 800x600x60Hz, 800x600x72Hz, 800x600x75Hz, 800x600x85Hz, 640x480x75Hz, 640x480x85Hz |

# 9.2.2 SCHEMATIC OUTLINE FOR IDS 21”



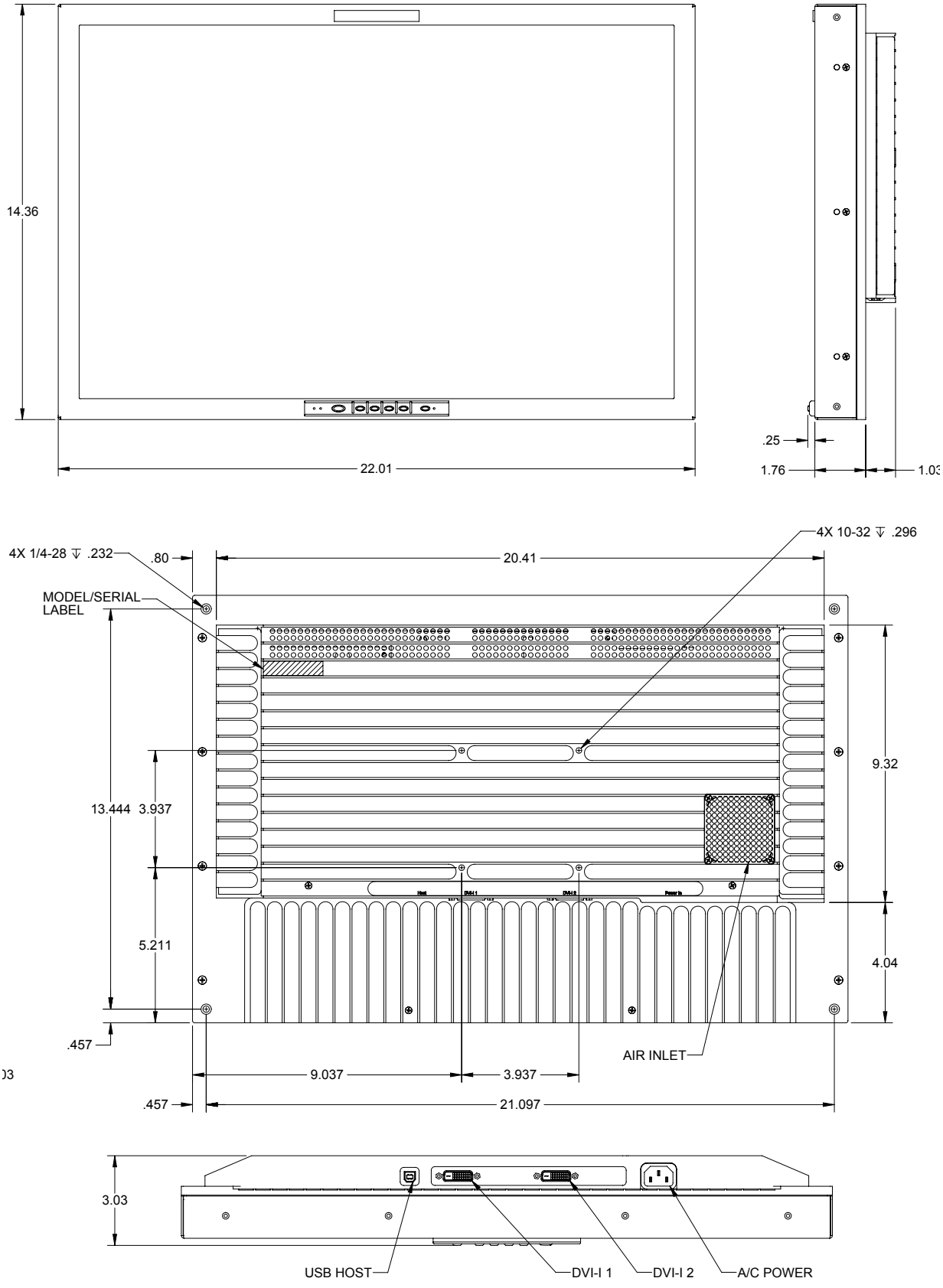
# 9.3.1 TECHNICAL SPECIFICATIONS FOR IDS 24”

The IDS Display series is meticulously engineered to be adaptable and suited for an array of field operation, as well as being designed to support a wide selection of resolutions. The specifications unique to each particular LCD can vary. These particular specifications are available through our sales department.

| | |
|---|---|
| **LCD Panel** | |
| Active Display Size | 24" |
| Native Pixels | 1920 x 1200 (2.3 Million Pixels) |
| Color Paletter | 16.7 Million |
| Viewing Angle | Full +/-89° |
| Controls | User accessible via Control Panel or SoftMenu |
| Options | TouchScreen, AR Shield, AG Shield, |
| | Wire Mesh* |
| **Power** | |
| Power Consumption | 101W |
| Power Supply | 100-240 VAC, 2.0A input @ 50-60Hz, 400Hz |
| **Input Connectors** | |
| Display | DVI-I with optional features including analog (HD-15), NTSC/PAL (BNC), digital (DVI-I), or HDSDI (BNC) |
| Power Cable | 6' cable, 1x IEC C14 Inlet Connector Standard |
| Touch Screen Interface | 6' 9-pin DSUB provided (pins 2, 3, 5, straight through) 10' cable, DB9 |
| **Physical** | |
| Size | 14.36” H x 22.01” W x 2.79” D |
| Weight | 18.7 lbs. |

| | |
|---|---|
| **Environmental** | |
| Operating Temp | 0°C to +50°C |
| Extended Op Temp** | -20ºC to +50ºC |
| Non-Op Temp | -40ºC to +70ºC |
| Humidity | 5% to 95% Non condensing (Design Goal) |
| Non-Op Altitude | Up to 40,000 ft. |
| Operating Altitude | Up to 15,000 ft. |
| Vibration | MIL-STD-167 |
| Shock | MIL- STD 810F, 30g's |
| Fungus | Non-Nutrients/Contaminants |
| **Reliability** | |
| MTBF | 50,000 hrs, Backlight and LCD only |
| MRRT | <30 Minutes |
| **Regulatory** | |
| Safety | UL60950<br>MIL-STD-461E, RE101 Army Limits, RE102, |
| EMI/EMC | RS101, RS103 (20v/m 2MHz and 60v/m 1GHz-18GHz), CE101, CS114, CS115, CS116 |
| **Quality/Workmanship** | |
| IPC / ISO 9001:2008 and applicable section of MIL-HDBK-454 | |
| **Supported Resolutions** | |
| 1920x1080x60Hz, 1920x1200x60Hz, 1440x900x60Hz, 1280x1024x60Hz, 1280x1024x67Hz, 1280x1024x75Hz, 1280x1024x85Hz, 1280x768x60Hz, 1280x768x75Hz, 1152x864x75Hz, 800x600x60Hz, 800x600x72Hz, 800x600x75Hz, 800x600x85Hz, 640x480x75Hz, 640x480x85Hz | |

# 9.3.2 SCHEMATIC OUTLINE FOR IDS 24”



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